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# The Influence of Positive and Negative Death Attitudes on Medical Students' Empathy and Attitudes Toward End-of-Life Care

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Philadelphia College of Osteopathic Medicine  
Department of Psychology

THE INFLUENCE OF POSITIVE AND NEGATIVE DEATH ATTITUDES ON  
MEDICAL STUDENTS' EMPATHY AND ATTITUDES TOWARD END-OF-LIFE  
CARE

By Elizabeth Palumbo  
Submitted in Partial Fulfillment of the Requirements for the Degree of  
Doctor of Psychology  
June 2015

**PHILADELPHIA COLLEGE OF OSTEOPATHIC MEDICINE  
DEPARTMENT OF PSYCHOLOGY**

**Dissertation Approval**

This is to certify that the thesis presented to us by Elizabeth Palumbo  
on the 18 day of May, 2015, in partial fulfillment of the  
requirements for the degree of Doctor of Psychology, has been examined and is  
acceptable in both scholarship and literary quality.

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## **Abstract**

This quantitative study employed a cross-sectional survey research design in order to examine the relationships between medical students' death attitudes, empathy, and attitudes toward end-of-life care. The participants were 206 medical students currently enrolled in the Doctor of Osteopathic Medicine program at the Philadelphia College of Osteopathic Medicine, Philadelphia campus. Results indicated that there were no significant differences in the level of empathy between medical students who held strong positive death attitudes and medical students with strong negative death attitudes. However, results indicated that significant differences existed in attitudes toward end-of-life care between medical students who held strong positive death attitudes and medical students with strong negative death attitudes, with possessing strong the former reporting more negative attitudes toward end-of-life care. No significant relationships were indicated in regard to positive death attitudes based on students' gender or cohort year. These findings provided information about how future physicians cope with death, and how their personal death attitudes influence their expression of empathy and their attitudes toward end-of-life care.

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## **Chapter 1**

### **Introduction**

#### **Statement of the Problem**

In light of healthcare reform and the modern phenomenon of the increased occurrence of death in institutionalized settings, much of recent death attitude research has focused on physicians and medical students (Bendix, 2012; Black, 2007; Neimeyer, 1994). Research has shown that the personal death attitudes of physicians affect their professional behaviors, including the expression of empathy and the provision of end-of-life care (Diamond, 2012; Doukas, Gorenflo, & Supanich, 1998; Eggerman & Dustin, 1985; McQuade, 1992; Robbins, 2012; Rutecki, Cugino, Jurjoura, Kilner, & Whittier, 1997; Schulz & Aderman, 1979; Servaty, Krejci, & Hayslip, 1996). However, researchers disagree about the extent to which physicians' personal death attitudes influence empathy level, indicating a need for clarification of the relationship between death attitudes and empathy in physicians (Donohoe, 2002; Niemeyer, Wittkowski, & Moser, 2004; Ptacek, Ptacek, & Ellison, 2001; Ratanawongsa, Hauer, & Teherani, 2005; Robbins, 2012; Servaty et al., 1996; Tomer, Eliason, & Wong, 2007; Wass, 2004; Williams, Wilson, & Olsen, 2005).

In addition, recent research has revealed that individuals tend to choose a variety of means of coping with death that incorporate both negative and positive attitudes (Niemic & Schulenberg, 2011; Niemeyer et al., 2004; Tomer et al., 2007). However, the preponderance of death attitude research to date has focused on the measurement of negative death attitudes and the factors influencing them, but has largely ignored the positive perspective (Tomer et al., 2007). A gap exists in the research in relation to positive death attitudes, as well as the influence the combination of both positive and

negative death attitudes has on physicians' empathy and attitudes toward end-of-life care (Tomer et al., 2007).

### **Purpose of the Study**

This study aimed to measure the death-related cognitions of medical students in a mode contrasting with typical investigatory approaches by focusing on the positive death attitude of acceptance. In addition, this study examined the relationships between both positive and negative death attitudes on medical students' levels of empathy and attitudes toward end-of-life care. A more nuanced profile of medical students' personal death attitudes emerged by using a scale grounded in Meaning Management Theory (MMT) (Wong, Reker, & Gesser, 1994), which provided a framework that allowed both positive and negative attitudes to be studied together (Tomer et al., 2007). In addition, clarification of the relationship between death attitudes and empathy was obtained through study of the positive death attitude of acceptance. The results illuminated a more realistic view of how medical students psychologically prepare for death, which yielded a richer insight into how future physicians' personal death attitudes influenced their professional behaviors than the findings of conflicting studies focused exclusively on negative death attitudes.

## **Chapter 2**

### **Literature Review**

The climate of healthcare has been changing. When the Affordable Care Act (ACA) rolled out on January 1, 2014, 32 million more Americans became eligible for health insurance coverage (Bendix, 2012). The majority of these individuals were eligible for Medicaid, and physicians were required to add many more patients to their already heavy caseloads (Bendix, 2012). Moreover, as the baby boomer population ages, there is a need to provide this “silver tsunami” with quality end-of-life care, which will be primarily covered by Medicare (Taylor, 2003; Teno et al., 2013). In order to incentivize physicians and ensure quality healthcare for all, reimbursement bonuses were made available to physicians who treat Medicare and Medicaid patients and meet quality control standards based on patient satisfaction and treatment outcomes (Bendix, 2012; National Physicians Alliance, 2013).

Furthermore, recent research has shown an increase in hospice use over the past decade, indicating that more Americans are rejecting aggressive end-of-life care (Teno et al., 2013). However, research has also revealed that despite a demand for less aggressive end-of-life care options, end-of-life ICU utilization, repeat hospitalizations, and late-in-life health care transitions have increased (Teno et al., 2013). This discrepancy has been attributed in part to the lack of timely communication with patients and their families about the goals of end-of-life care (Teno et al., 2013). Unquestionably, there is a strong need for physicians to serve dying individuals and their families effectively and compassionately (Taylor, 2003; Teno et al., 2013). Therefore, the future of healthcare must focus on hiring physicians who can express high levels of empathy and provide exemplary end-of-life care (Bendix, 2012).

Research to date has shown that negative death attitudes, such as anxiety and fear, negatively impact physicians' professional behavior, including the provision of quality end-of-life care. However, the effects of the positive death attitude of acceptance have been largely unexplored, despite the possibility that this construct could enhance physicians' end-of-life care (Wong & Tomer, 2011). Interestingly, recent literature concerning death attitudes has shown that most individuals employ a combination of negative and positive death attitudes in order to cope effectively with mortality (Wong & Tomer, 2011). Therefore, an investigation into how positive and negative death attitudes influence physicians' empathy and attitudes toward end-of-life care is both relevant and necessary.

### **History of Death Attitude Research**

An attitude is defined as a settled way of thinking or feeling about someone or something, typically reflected in a person's behavior (Freeman, Felgoise, & Davis, 2008). Death attitudes are triggered by "mortality salience," which is the term used in the literature to describe awareness of one's eventual death (Chambers-Klein, 2012; Robbins, 2012). When primed by mortality salience, a variety of attitudes regarding death and dying may emerge, ranging from fear to acceptance (Tomer et al., 2007). The literature on death attitudes is large and diverse, and many terms are used interchangeably, including fear of death, death anxiety, death avoidance, and death acceptance (Neimeyer, 1994; Strack, 1997). In order to understand and appreciate the multifaceted and complex nature of the psychology of death, it is important to know what each term means and how

they relate to each other. Although each term has its own unique definition and connotations, there is a degree of overlap (Ohman, 2010).

When the psychology of death became popular in the 1950s, death attitudes were not yet well defined, and the constructs of death fear and death anxiety were the focus of research interest (Neimeyer, 1994). Measurement scales focused exclusively on measuring negative attitudes, largely ignoring positive death attitudes (Neimeyer, 1994; Tomer et al., 2007). Consequently, the psychology of death literature is dominated by the exploration of negative death attitudes (Neimeyer et al., 2004). However, as the study of the psychology of death has evolved, social psychologists and existential researchers began to expand their understanding of how humans process the concepts of death and dying, and adopted measurement instruments that captured the true complexity of death attitudes (Neimeyer, 1994). This evolution included the creation of several positive death attitude scales that conceptualized death attitudes as solely negative or as the absence of some negatively valenced attitude (e.g., no death anxiety), but also as positively valenced in nature (Neimeyer, 1994).

However, due to the growing prominence of the issue of death attitudes, some researchers rushed their scales into application before establishing the validity and reliability of their measures (Gesser et al., 1987; Mikulincer & Florian, 2007; Neimeyer, 1994). In addition, many of the early scales measuring death attitudes were not grounded in any particular theory, and the majority of empirical studies were correlational rather than genuinely experimental (Tomer et al., 2007). The predominant focus of study into negative death attitudes was most likely a reflection of the commonly held belief that

humans fear death to some degree (Niemeyer, 1994; Niemeyer et al., 2004; Tomer & Eliason, 2000).

### **Negative Death Attitudes**

***Fear of Death.*** Fear of death is a conscious, concrete belief that death is frightening, and that fear is our body's natural response to threatening stimuli in our environment (Neimeyer, 1994). Various fears of death have been identified: (1) the finality of death; (2) the uncertainty of what follows; (3) non-existence; (4) loss of material goods; (5) disruption of the flow of life; (6) leaving loved ones behind; (7) the pain and loneliness in dying; (8) an untimely and violent death; (9) failing to complete mission in life; (10) judgment and retribution (Tomer et al., 2007). Moreover, three dimensions of fear of death have been identified: *intrapersonal* death fear involves concern about accomplishing major life goals and fulfilling one's purpose; *interpersonal* death fear involves worry about leaving loved ones and/or being forgotten by them; and *transpersonal* fear of death involves concern about what happens after death (Tomer et al., 2007). Elevated levels of fear of death have been linked to psychological distress and can lead to feelings of dissatisfaction and an inability to live life to the fullest (Neimeyer, 1994; Payne et al., 1998).

***Death Anxiety.*** Death anxiety is defined as vague discomfort "experienced in everyday life rather than in acute situations where there are immediate threats to life" (Payne et al., 1998, p. 701). Anxiety encompasses feelings of dread generated by an imagined threat, which come in the form of troublesome thoughts, emotions, and behaviors related to death and dying (Chambers-Klein, 2012; Furer & Walker, 2008; Moorhead, Johnson, & Maas, 2008). Current literature suggests that death anxiety is a

nearly universal phenomenon, experienced by most if not all individuals in our society (Chambers-Klein, 2012). However, excessive death anxiety can become problematic when it negatively affects relationships and academic or work performance (Furer & Walker, 2008).

***Death Avoidance.*** Avoidance is one way for humans to regulate fear or anxiety. As a means of coping, humans learn to habitually avoid thoughts, emotions, or situations that make them uncomfortable (Furer & Walker, 2008). One way that humans obtain short-term relief from the consequences of mortality salience is to avoid situations related to themes of death, including attending funerals, visiting sick friends, writing a will, and/or conversing with others about death and dying. Such behavior is characterized as death avoidance (Furer & Walker, 2008). Like fear of death and death anxiety, excessive avoidance strategies have been shown to lead to dysfunction in day-to-day life (Chambers-Klein, 2012; Furer & Walker, 2008). Because fears of death, death anxiety, and death avoidance have been demonstrated to have negative consequences, they are referred to as negative death attitudes (Neimeyer, 1994). Researchers have well established that increased levels of negative death attitudes can lead to emotional distress in the general population (Tomer et al., 2007).

### ***Factors Influencing Negative Death Attitudes***

***Gender.*** Overall, women expressed more death fear and anxiety than men. One explanation for this result is that women generally express themselves more freely than men (Chambers-Klein, 2012). In addition, research has shown that men are significantly



more probable to avoid all thoughts of death than women, which may be another reason why men report less negative death attitudes (Taylor, 2003). Cumulatively, this research suggested that women report more negative death attitudes than men; nevertheless, it does not necessarily mean that men do not experience death fear and anxiety. However, regardless of the orientation of the relationship, for the purposes of this study, empirical evidence suggested that gender significantly influenced death attitudes to the extent that women report higher levels than men do (Tomer et al., 2007).

**Age.** In general, literature showed a negative correlation between age and negative death attitudes. Younger adults in their twenties reported higher fear of death and anxiety than older adults, starting at age sixty (Neimeyer et al., 2004). In addition, death fear and anxiety tended to decrease from middle age to old age (Taylor, 2003). It is widely accepted that death attitudes are not stable across the lifespan, and shift into increased comfort with mortality in later life. One explanation for this effect was that the longer individuals live, the more experience accrues in working through the deaths of parents, peers, and partners (Taylor, 2003). The general pattern in the literature suggested that as age increases, negative death attitudes decrease (Neimeyer et al., 2004).

### **Positive Death Attitudes**

**Death Acceptance.** Death acceptance has been conceptualized as an attitude toward mortality that combines the cognitive awareness of mortality with a positive, or at least neutral, emotional reaction to this awareness (Tomer et al., 2007). To date, death acceptance is the only positive death attitude identified in the literature; it is considered

positive because those possessing high death acceptance experience positive outcomes (Tomer et al., 2007). For example, previous research has shown that death acceptance is a factor related to living a happy, fulfilled life (Neimeyer, 1994; Tomer et al., 2007; Payne et al., 1998). Many researchers have documented that individuals who believe they have lived a good life and have completed their life's mission are better prepared to face death (Neimeyer, 1994; Tomer et al., 2007). In theory, death acceptance can set humans free from the negative consequences of fear and anxiety and energize them to live with vitality and purpose (Wong & Tomer, 2011).

The attitude of death acceptance was first brought to public awareness when Elizabeth Kubler-Ross (1969) conceptualized it as the last stage of dying in terminally ill patients. In her observations of terminally ill patients, she described death acceptance as being psychologically prepared for death. She even posited that those who view death with acceptance might bypass other stages of dying, like denial, anger, bargaining, and depression. Subsequently, Klug and Sinha (1987) elaborated on the term, defining it as "the deliberate, intellectual acknowledgment of the reality of one's own death and the positive emotional assimilation of the consequences" (p. 230). Their conceptualization included two components: the cognitive component of acknowledging mortality and the emotional component of reconciling the inevitability of death with one's personal belief system.

At the same time, Gesser et al. (1987) proposed a three-component model of death acceptance: (1) *neutral* acceptance, or simply accepting death as a reality that is neither welcomed nor feared; (2) *approach* acceptance, or accepting death as a passageway to a happy afterlife; and (3) *escape* acceptance, or accepting death as an

escape from a painful existence (Tomer et al., 2007). Neutral acceptance implies an ambivalent or indifferent attitude. Approach acceptance implies belief in a happy afterlife, which is closely tied to religious belief. This path to acceptance was based on research showing that those with strong religious beliefs were individuals who are overwhelmed with physical and/or emotional pain believe that death will free them from the constraints of a painful existence (Neimeyer, 1994). Using their three-component model of death acceptance, Gesser et al. (1987) constructed the Death Attitude Profile-Revised, which has become a frequently used measurement tool in research into the psychology of death (Wong & Tomer, 2011).

Although still in its infancy, death acceptance literature is growing (Niemiec & Schulenberg, 2011; Tomer & Eliason, 2000; Tomer et al., 2007). The few studies that have explored death acceptance and professional behaviors examined nurses' attitudes in relation to patient care (Braun, Gordon, & Uziely, 2010; Payne et al., 1998; Rooda, Clements, & Jordan, 1999; Iranmanesh et al., 2010; Malliarou et al., 2010). Results have shown that nurses who scored low in death acceptance were less likely to perceive any positive aspects of death (Braun et al., 2010; Rooda et al., 1999). In contrast, nurses who scored high in death acceptance tended to have more positive attitudes toward giving care to dying patients, and demonstrated positive attitudes toward dying patients. Furthermore, those nurses scoring high in death acceptance cultivated more effective communication patterns and better relationships with patients (Iranmanesh et al., 2010; Malliarou et al., 2010). An important clinical implication of these studies was the need to modify nursing school curricula to incorporate death acceptance as a way to improve professional behaviors and patient care (Braun et al., 2010).

Little is known about how positive death attitudes affect professional behaviors in physicians or medical students. Black (2007) studied 194 healthcare professionals (74 nurses, 29 social workers, and 32 physicians), using the Death Attitude Profile-Revised (DAP-R) to investigate the relationship between death acceptance and communication with patients about issues of death and dying. This study concluded that physicians' personal death attitudes influenced their ability to discuss end-of-life decision-making issues with patients (Black, 2007).

Black (2007) discovered that death acceptance positively correlated with initiating discussion about advanced care directives. However, physicians were significantly less likely to initiate these discussions if scoring high in death avoidance and fear of death. Because preliminary research has indicated that the apparent reasons for increased end-of-life ICU utilization, repeat hospitalizations, and late health care transitions arose from the lack of timely communication with patients in regard to the goals of end-of-life care, these results lent credence to the importance of studying death acceptance in relation to professional behaviors (Teno et al., 2013). As these preliminary results revealed, there is compelling evidence that physicians who have the positive death attitude of acceptance can improve end-of-life care communication and patient satisfaction, while decreasing costly end-of-life decision making (Black, 2007). The following section will discuss the theories underpinning psychology of death research and will conclude with a description of the benefits of a dual-system model of coping with death.

### **Theoretical Perspectives**

As the psychology of death has evolved over the past hundred years, *Terror Management Theory* (TMT) and *Meaning Management Theory* (MMT) have emerged as theoretical explanations of how human beings cope with the awareness of mortality (Tomer et al., 2007). TMT provides a defense against the terror of death awareness, but MMT offers a positive, growth-oriented perspective on the psychology of death (Tomer et al., 2007).

### **Terror Management Theory (TMT)**

Greenberg, Pyszczynski, and Solomon (1986) conceptualized Terror Management Theory (TMT), which remains the preeminent theory concerning how humans cope with the terror of death awareness. Their work was inspired by the ideas of Pulitzer Prize-winning anthropologist Ernest Becker (1973). Becker (1973) noted that human beings have evolved to be self-conscious, but this capacity brought with it the awareness of eventual death. He believed that this awareness could produce crippling fear in humans if it remained constantly in the forefront of attention. Therefore, in order for humans to cope with death awareness, the fear of death must be repressed. To that end, humans must maintain a continuous psychological effort to keep that fear repressed (Becker, 1973). Nevertheless, Becker (1973) also posited that the fear of death must simultaneously remain in our awareness in order to motivate humans toward self-preservation.

Becker (1973) believed that the conflict between awareness of our mortality and defense against the terror of that knowledge was a uniquely human problem, one that animals did not endure. He believed that humans created culture in order to help themselves cope with living with the knowledge that death could be just around the

corner. Becker stated that by creating and investing in cultures, which are symbolic systems of meaning and value, humans gain a sense of *literal immortality* (belief in an afterlife) and/or *symbolic immortality* (the sense that they will live on through others and in their culture) (Dechesne et al., 2003).

Symbolic immortality is a nonreligious form of survival after death related to *biological* immortality (living on in the memories of children/grandchildren), *artistic* immortality (perpetuation in the form of works of art), or *communal* immortality (commemoration for heroic or altruistic deeds that benefit the community) (Landau, Greenberg, & Solomon, 2004; Vail et al., 2010). Surely, religious worldviews, or at least those with comforting promises of an afterlife, offer literal immortality: to those holding such worldviews, physical death is not final. In fact, religious worldviews also confer symbolic immortality by allowing people to feel like valued parts of something larger and more enduring than themselves (Landau et al., 2004; Vail et al., 2010).

In addition, Becker (1973) believed that cultural values provide the blueprint for what matters in life, and as such are the basis from which self-esteem is derived. Therefore, from a TMT perspective, self-esteem and cultural worldviews are the primary defenses against the terror evoked by the awareness of our mortality. TMT contends that when people are reminded of their own deaths, they more readily defend such cultural beliefs and protect their self-esteem (Chambers-Klein, 2012). For example, after 9/11, many in the United States displayed American flags, demonstrating pride in their identification as Americans to defend against the terror elicited by thoughts of their inevitable demise (Grant & Wade-Benzoni, 2009; Tomer et al., 2007).

Although TMT remains the dominant theory regarding the psychology of death, it maintains a defensive posture against the fear of death awareness, which can actually increase negative death attitudes and ultimately distress (Wong & Tomer, 2011). Researchers have established that negative attitudes lead to suffering, and TMT implies that repressing the fear of death is a better way to cope with it than exploring and accepting the fear. Defense against consciousness of death entails erecting a barrier against it, in order to exclude fearful death thoughts from awareness. Acceptance, however, requires tearing down that barrier, in order to encourage and explore thoughts of death and dying and thus improving the chances of living a fulfilled, happy life. Death acceptance is a positive death attitude, because it provides a way to find relief from the effects of the fear and anxiety commonly associated with death awareness (Neimeyer et al., 2004).

### **Meaning Management Theory (MMT)**

Meaning Management Theory (MMT) is a positive existential theory (Wong, 2005) that proposes that offense is the best defense, and that for some individuals, the motivation to live a meaningful and happy life prevails over the need to defend against the terror of death (Tomer et al., 2007). The basis of this theory is the existential emphasis on human beings' need for a sense of meaning in order to face death, focusing on death acceptance through meaning-making (Neimeyer, 1994). By viewing mortality in a positive light, humans invest energy and time in living a good life, rather than defending against an inevitable death (Tomer et al., 2007). MMT provides both a conceptual framework and guidelines for facilitating death acceptance and meaningful

living as indirect but effective means to combat death fear and anxiety (Tomer et al., 2007; Wong, 2005; Wong, 2009). Humans participate in various forms of meaning making, including 1) *meaning seeking*; 2) *meaning making*; and 3) *meaning reconstruction* (Tomer et al., 2007).

***Meaning Seeking.*** To survive, humans must be able to predict and control some events in their environment, which is filled with sensory data (Tomer et al., 2007). Humans are hardwired to seek meaning (to connect the dots, to put the puzzle pieces together) and make sense of life (Tomer et al., 2007). We are able to adapt to the ever-changing world almost without any conscious effort. However, a variety of situations may trigger an urgent quest for meaning, including life transitions and stressful major events, such as trauma, natural disaster, life-threatening illness, and untimely death of a loved one. Whenever an event shatters our world or challenges our identity, meaning seeking is activated. In some individuals, even the awareness of death and suffering is sufficient to trigger a persistent quest for meaning (Tomer et al., 2007).

Managing meaning seeking involves empowering and guiding different search processes until one is satisfied with the result. MMT predicts that we can adjust to life's transitions, disruptions, and epiphanies to the extent that we can discover attributions and meanings that enhance our sense of meaning, hope, and control, and reveal some benefits of our suffering. Finding meaning and benefits makes it easier for us to accept death and to face life with hope (Tomer et al., 2007).

***Meaning Making.*** While meaning seeking emphasizes the processes of searching for and finding meaning, meaning making focuses on actively creating meaning. There are three major avenues for meaning making: *social construction*, *goal-striving*, and



*personal development.* Social construction of meaning through language and culture plays a major part, because it involves processes of socialization and acculturation. As cultural beings, we collectively construct both patterns of meaning and values to imbue life with coherence and significance. We learn to identify with enduring cultural norms and icons and derive meaning from behaving accordingly (Tomer et al., 2007). In addition, storytelling encompasses a wide range of narrative devices and processes, such as letter writing, journal keeping, life review and reminiscence, and myth making. It requires the ability to weave a story by connecting different fragments, filling gaps and reconciling contradictions. Storytelling is essential to developing identity and holistic self-understanding (Tomer et al., 2007).

Goal-striving involves the pursuit of long-term life goals as well as specific short-term projects. Creating meaning depends on both the significance and success of goal-striving. Researchers have shown that persistence and flexibility are important coping mechanisms in meaning making (Tomer et al., 2007). Additionally, personal development is fundamental to meaning making. It typically involves the development of one's worldview, philosophy of life, values, and belief systems. Education, religion, culture, and personal and family experiences all contribute to personal development. It is possible for this development to be arrested or facilitated, depending on person-environment interactions. One's stage of personal development profoundly influences how well one copes with the challenges of life and death.

***Meaning Reconstruction.*** Meaning reconstruction is triggered to help us organize and make sense of tragedy, so that we can move forward in peace (Tomer et al., 2007). The reconstruction process often involves intense meaning seeking and meaning

making aimed at restoring a sense of order and coherence. The greatest challenge is learning to transform highly negative events and integrate them with positive events and future planning. The transformative process can be both narrative and personal. Personal transformation entails revamping one's worldview and core values; narrative transformation entails re-authoring and re-storying (Tomer et al., 2007).

Other processes involved in meaning reconstruction include confronting and reexperiencing the past, reviewing and reconstructing the past, collecting relevant information from various sources, reexamining one's assumptions, and exploring alternative assumptions and meanings. All three processes are intentional, conscious efforts to imbue life and death with meaning, thus facilitating death acceptance. They are often interrelated and interact with each other in the service of finding and creating positive and adaptive meaning for living (Tomer et al., 2007).

MMT is a comprehensive psychological theory concerning the management of our various meaning-related processes. The basic tenets are 1) humans are bio-psycho-social-spiritual beings; 2) humans are meaning seeking, meaning making, and meaning reconstructive; 3) humans have two primary motivations - to survive and to find the reason for and meaning of survival; 4) meaning can be found in all situations; and 5) the motivational tendencies of avoidance and approach may complement each other. In keeping with the fifth tenet, MMT recognizes the legitimacy of TMT and the benefits of some mechanisms of defense. Indeed, MMT complements TMT by representing the positive side of the psychology of death (Tomer et al., 2007).

In sum, TMT has been a valuable theoretical framework for researchers investigating how human beings psychologically prepare for death. Furthermore, MMT

grew from and expanded upon the fundamentals of TMT: it includes a positive stance towards coping with mortality salience. Moreover, recent research has shown that humans cope with death awareness by utilizing both positive and negative attitudes (Wong & Tomer, 2011). Therefore, measuring both negative and positive death attitudes at the same time can provide researchers with a more realistic representation of how humans are influenced by their death attitudes (Niemic & Schulenberg, 2011; Tomer & Eliason, 2000; Wong & Tomer, 2011). The concept that individuals use both negative and positive attitudes to cope with death is called the *dual-system model* (Wong & Tomer, 2011).

### **Dual-System Model of Coping with Death**

In reality, positives and negatives often co-exist. It is rare if not impossible to find purely positive or negative conditions (Wong & Tomer, 2011). Similar to the concept of yin-yang, every positive or negative element contains a seed of its opposite. For example, one can be happy about a promotion but worried about the added stress it entails. By the same token, one can feel sad about losing a job, but feel happy that one can return to school for retraining. A purely either-or dichotomy is inadequate to capture the complexities of human experience (Wong & Tomer, 2011).

According to the dual-system model of coping with death, one must depend on the cooperation and interaction of *approach* and *avoidance* systems (Wong & Tomer 2011). These two complementary tendencies represent two different motivations and life orientations. The defensive tendency to avoid pain, suffering, danger, anxiety, and death serves a protective function, seeking security and self-preservation in a chaotic and often

dangerous world. Those who take a defensive stance toward life and death tend to be very cautious and timid, afraid of making changes or taking risks. Paradoxically, their defensive orientation may actually increase their level of fear and anxiety (Wong & Tomer, 2011).

The approach system is primarily concerned with pursuing worthwhile life goals, such as seeking career success or raising a happy and healthy family. The human quest for meaning and spirituality occupies the center stage; death anxiety is pushed into the background of our awareness by our engagement in a meaningful life. Such an engagement cannot be maintained without dealing with setbacks, negative thoughts, and fear of untimely death. Optimal functioning depends on transforming the negative to strengthen the positive, involving both approach and avoidance systems. However, the positive orientation is more concerned with what makes life worth living in spite of suffering and death anxiety (Wong & Tomer, 2011). Approach and avoidance systems coexist and operate in an interdependent fashion. The approach system represents appetitive behaviors, positive effects, goal-strivings, and intrinsic motivations. The avoidance system represents defensive mechanisms against threats and negative emotions. Both approach and avoidance systems must interact to optimize positive outcomes (Wong & Tomer, 2011). In other words, neither system can function effectively in isolation. When the two systems work together in a balanced and cooperative manner, the likelihood of surviving and flourishing is greater than that derived from focusing exclusively on either approach or avoidance (Wong & Tomer, 2011).

The positive system can mitigate the avoidance system in at least four ways (Wong & Tomer, 2011). First, maintaining a hopeful and positive attitude towards death can reduce the threat of negative conditions, such as fear and anxiety. Second, a strong approach response in spite of anxiety can reduce the avoidance tendency. Third, positive consequences of success can lead to a reappraisal of negative conditions as less threatening. Finally, discovering benefits and positive meanings in setbacks can reduce the adverse effects of negative outcomes (Wong & Tomer, 2011). The dual-system model gets to the heart of the human struggle to move forward and achieve worthy life goals, while attempting to overcome external and internal constraints that threaten to make life miserable and hopeless, much like MMT (Wong & Tomer, 2011). The dual-system model also provides a conceptual framework to integrate both positive and negative psychology, which could help to explain more realistically how individuals cope with the reality of death (Rachman, 2011; Wong & Tomer, 2011).

### **Summary**

Research has shown that death attitudes influence the professional behaviors of physicians and therefore could be used as a tool for measuring, understanding and potentially improving future physicians' empathy and professional behaviors in end-of-life care (Tomer et al., 2007). One way to gain insight into how to improve these professional behaviors is through the study of death attitudes, specifically positive death attitudes (Tomer & Eliason, 2011). In order to be successful in the emerging model of healthcare, future physicians must learn how to provide effective and satisfactory end-of-life care and appropriately express empathy (National Physicians Alliance, 2013).

## Empathy

Empathy has been described as an ambiguous concept, a complex notion that is difficult to define and hard to measure. In addition, the literature with regard to empathy is rich and vast (Michalec, 2010). Therefore, for the purposes of this study, the term *empathy* referred to an aspect of personality that has an important role within interpersonal relationships and in facilitating competence in communication (Chen, Kirshenbaum, Yan, Kirshenbaum, & Aseltine, 2012). Researchers discovered that when physicians communicate information empathically, patients are more likely to report high satisfaction with that physician (Pollak et al., 2011; Smith, Lyles, Mettler, & Marshall, 1995). Two types of empathy have been identified in the literature: *cognitive empathy* and *affective empathy*. Cognitive empathy refers to one's ability to think about what being in the other person's shoes is like. Affective empathy is defined by one's ability to express empathic behaviors in order to convey understanding (Chen et al., 2012). Overall, physician empathy is an essential attribute of the patient-physician relationship (Riess, Kelley, Bailey, Dunn, & Phillips, 2012).

Researchers have established that empathy is related to many advantageous attitudes, such as positive wellbeing, life satisfaction, positive social interactions and relationship experiences, open-mindedness, peer acceptance, higher social desirability, altruism, humanistic and prosocial attitudes, and forgiveness (Cosme, Pepino, & Brown, 2010; Gruhn, Rebucal, Diehl, Lumley, & Labouvie-Vief, 2008; Kampfe, Penzhorn, Schikora, Dunzl, & Schneidenbach, 2009; Oberle, Schonert-Reichl, & Thomson, 2010; Van Lange, 2008; Stocks, Lishner, & Decker, 2009; Toussaint & Webb, 2005). Gruhn et

al. (2008) studied self-reported empathy in a four-wave longitudinal study spanning 12 years, and found that empathy was significantly associated with measures of positive development, including subjective wellbeing.

In addition, researchers found that empathic individuals were more satisfied with their lives, perceived their social interactions as more meaningful, and felt more positive in these interactions than did non-empathic individuals (Gruhn et al., 2008). Similarly, Cosme et al. (2010) reported that those with higher levels of empathy are significantly more understanding of others' emotional states and display significantly greater moral reasoning than those who reported lower levels of empathy. Therefore, it will benefit physicians to learn about what factors that influence the provision of empathic care in order to ensure patient satisfaction (Pollak et al., 2011). Two variables that influence empathy in medical students are gender and cohort year.

### **Gender**

Across the board, women reported higher levels of empathy than men (Berg, Majdan, Berg, Veloski, & Hojat, 2011; Chen et al., 2012; Servaty et al., 1996). Researchers have reported that gender differences could result from the idea that more women than men report empathy on paper; however, they might not display more empathy behaviorally (Gruhn et al., 2008). Tavakol, Dennick and Tavakol (2011) found that female medical students were more empathic compared to male medical students in their study of 853 students from the University of Nottingham Medical School. Similarly, Berg et al. (2011) observed that female medical students scored higher than male medical students on three measures of empathy at the end of the third year. In addition, Calabrese, Bianco, Mann, Massello, and Hojat (2013) found that female

medical students reported significantly more empathy than male medical students in their study of 373 osteopathic medical students. Overall, it has been demonstrated that female medical students reported higher levels of empathy than male medical students.

### **Cohort Year**

Researchers have established that empathy decreases in medical students as they progress through medical school (Chen et al., 2012; Hojat et al., 2009; Michalec, 2010). Specifically, empathy levels begin to decline in the third year (Chen, Lew, Hershman, & Orlander, 2007). Researchers have hypothesized that this change occurs because of experiential learning that begins in the third year of medical school, when the attitudes of physicians practicing Western medicine are modeled for medical students in real-life training situations (Burks & Kobus, 2012). Traditionally, physicians who practice Western medicine are taught to distance themselves from their emotions and the emotions of their patients in order to objectively and effectively carry out their work (Kasket, 2006).

In addition, significant medical school stress has been attributed to impacting this decline in empathy, including the stressors of time management, academic pressure, and the amount of material expected to be retained, which continually increase as medical school progresses (Burks & Kobus, 2012). Therefore, it makes sense that empathy would decline as medical students gain more real-world experience and face increased medical school stress in year three. In addition, Servaty et al. (1996) found that freshman premedical students scored higher on empathy than senior premedical students, which provided further evidence of a decline in empathy among medical students as medical school progresses.



Interestingly, although this pattern applies to allopathic medical students, it does not hold true for osteopathic medical students. Most studies show that there is no significant decline in empathy among osteopathic medical students. Calabrese et al. (2013) compared osteopathic to allopathic medical students and found no significant difference between students in the first and second years. However, osteopathic medical students registered higher mean empathy scores than allopathic students in the third year, and their empathy remained high in year four (Calabrese et al. 2013). In addition, Kimmelman et al. (2012) observed that levels of empathy in osteopathic medical students did not decrease significantly as medical school progressed. Perhaps this difference existed because the holistic philosophy of osteopathy includes empathy as an inherent trait of the approach, but the allopathic approach focuses on the aforementioned distancing from patients' emotions (Calabrese et al., 2013).

### **Empathy and Death Attitudes**

Multiple studies suggest that as medical students' empathy increases, their personal death anxiety decreases (Diamond, 2012; Robbins, 2012). However, other studies found a positive relationship between medical students' degree of personal death anxiety and levels of empathy (Servaty et al., 1996; Smith & Kleinman, 1989). One possible explanation for this discrepancy is that physicians project emotions, such as empathy, to patients to deflect attention from their own anxieties (Smith & Kleinman, 1989). This is a common emotional management strategy utilized by medical students and physicians called "using the patient." By employing this strategy, students manage their own unease by shifting focus from their own uncomfortable thoughts and feelings to the patient's thoughts and feelings. Students and physicians with heightened death fear

and anxiety shift attention away from themselves by projecting empathy to the patient (Smith & Kleinman, 1989). In addition, increased empathy may indicate that medical students with higher death fear and anxiety tend to cope by empathically reaching out to those who are not dying, such as terminal patients' family members (Servaty et al., 1996).

Both of these avoidance strategies, projecting empathy onto dying patients or diverting it from dying patients to their families, could increase the degree of empathy reported by individuals with high levels of death fear and anxiety (Servaty et al., 1996). However, reporting empathy on paper may not equate to empathic communication with a patient in the office (Robbins, 2012). It is simply a strategy to reduce negative feelings in the moment (Robbins, 2012). In these cases, having more negative death attitudes seemed to increase empathy, which may not necessarily be a harmful behavior. Nevertheless, it indicated the need for clarification and deeper understanding of how death attitudes influence empathy in physicians and medical students (Diamond, 2012).

One final but important explanation for the inconsistencies in the literature on empathy and death attitude remains. Researchers have established that until recently, the most widely used and valid death attitude scales available failed to present a comprehensive picture of how individuals, including medical students and physicians, prepare psychologically for death. By focusing exclusively on the study of negative attitudes, the psychology of death literature has been dominated by the effects of and variables related to negative death attitudes (Niemeyer et al., 2004; Neimeyer, 1994; Tomer et al., 2007). To convey a balanced view of how humans psychologically prepare for death, the investigation of the effects and variables related to positive death attitudes should be pursued with equal rigor (Wong & Tomer, 2011).

**End-of-Life Care**

End-of-life care helps individuals with advanced, progressive, and incurable illnesses to live as well as possible until death. Physicians need to identify the supportive and palliative care needs of both patient and family in order to implement their choices and wishes throughout the last phase of life. These needs include management of pain and other symptoms and the provision of psychological, social, spiritual, and practical support (Owen & Porter, 2012). The provision of “good” end-of-life care includes initiating communication with patients and their families regarding the completion of advance care directives (Black, 2007).

An advance care directive is a document that outlines the decisions that patients and their families have made about how they want to be treated at the end of life, including resolutions about resuscitation, plans for pain management, and the implementation and/or withdrawal of life-sustaining treatments (Black, 2007; Owen & Porter, 2012). This process is complex, with many factors influencing end-of-life decision-making. Two factors that have been shown to influence end-of-life care attitudes relating to physicians and medical students are gender and cohort year (Duffy, Jackson, Schim, Ronis, & Fowler, 2006).

**Gender**

Few studies have been conducted regarding gender and end-of-life care; however, findings to date have provided evidence that women have more positive attitudes toward

end-of-life care than do men (Duffy et al., 2006; Gruber et al., 2008; Lloyd-Williams & Dogra, 2004). A study conducted by Lloyd-Williams and Dogra (2004) revealed that female medical students had significantly more positive attitudes toward end-of-life care than male medical students. In addition, a study conducted by Gruber et al. (2008) found that male medical students were more inclined than female medical students to always provide CPR (Gruber et al., 2008). Similarly, a study by Duffy et al. (2006) concluded that women were less likely than men to prefer and receive aggressive treatment at the end of life. Therefore, one can reasonably state that the results of this research show a trend towards women having more positive attitudes regarding end-of-life care than men (Chiang, Lin, & Liu, 2012; Reijntjes, Kamphuis, & Thomaes, 2013). This study will specifically examine the relationship between medical students' gender and their attitudes concerning end-of-life care.

### **Cohort Year**

Research has shown that increasing age is associated with more positive attitudes about end-of-life care; however, little research exists regarding change in students' attitudes about end-of-life care throughout the course of medical school (Lloyd-Williams & Dogra, 2004). Preliminary research indicated that attitudes toward end-of-life care do change over the course of medical school, depending on different teaching and experiential exposures (Lloyd-Williams & Dogra, 2004). Anderson, Williams, Bost, & Barnard (2008) studied 380 students from the University Of Pittsburgh School Of Medicine between 2001 and 2006. They found that 73% reported caring for dying patients or witnessing a patient's death during their third-year clerkships. Students had positive attitudes about physicians' responsibility and ability to help dying patients and

their families, but reported negative emotional reactions to end-of-life care. Specifically, a significant number of students reported agreement with such statements as: “Caring for dying patients is depressing,” “I feel guilty after a patient’s death,” and “I dread having to deal with the emotional distress of family members of a patient at the end of life.”

In addition, Gruber et al. (2008) studied 402 students at The Chinese University of Hong Kong regarding attitudes toward end-of-life decisions, including information delivery, informed consent, cardiopulmonary resuscitation, withholding and discontinuing life-support, key participants in decision-making, and intensive care admission. The researchers found that medical students’ attitudes toward end-of-life decisions changed during medical school, becoming increasingly convergent with those of practicing physicians and differing significantly from those of non-medical students (Gruber et al., 2008).

Gruber et al. (2008) also found a significant association between a more advanced year of medical training and decisions to limit intensive care unit (ICU) admission, CPR, and life-support therapy. However, as the year of training increased, students found deliberate administration of fatal doses of drugs to patients with poor quality of life less acceptable. They also found that most fourth-year medical students chose to continue existing care but withheld sophisticated treatments (Gruber et al., 2008). Moreover, as the stage of medical education increased, the amount of medical information students preferred to disclose to patients decreased, a worrisome trend (Gruber et al., 2008). Clearly, this attitude is contrary to the moral and ethical standards expected of practicing physicians. That result is similar to findings among fully qualified doctors, suggesting

that the change in attitude may be the result of experience-based learning (Gruber et al., 2008).

Little research exists specifically examining cohort year of osteopathic medical students in relation to end-of-life care. The literature has suggested that the osteopathic principles of holistic thinking and treatment are necessary for the provision of quality end-of-life care, including the philosophy that a physician treats a patient on multiple levels, including physical, psychological, emotional, social, and spiritual (Mason et al., 2008). For example, Mason et al. (2008) surveyed 66 osteopathic physicians and discovered that 89% of those surveyed said they believed that the principal philosophies of osteopathic medicine better prepared them for providing integrated end-of-life care. In addition, 79% agreed that the use of osteopathic diagnostic and treatment skills increased their ability to provide quality patient care. Osteopathic medical students might have more positive attitudes toward end-of-life care, because comprehensive care is intrinsic to the osteopathic approach. However, the relationship between osteopathic cohort year and attitudes toward end-of-life care deserves further exploration.

In sum, the literature regarding end-of-life care attitudes and cohort year is sparse; however, one can reasonably state that as cohort year increases attitudes change, based on increased knowledge and experience (Gruber et al., 2008; Lloyd-Williams & Dogra, 2004). As medical school progresses, more positive attitudes toward end-of-life care have been observed, which provides evidence that medical students' attitudes may become more positive over time. However, researchers also observed that a significant percentage of medical students reported negative emotional reactions to end-of-life care (Anderson et al., 2008). This finding demonstrated the need to explore further how death

attitudes relate to changes in attitudes toward end-of-life care as cohort year increases in osteopathic medical students. This study will specifically examine the relationship between cohort year and attitudes toward end-of-life care.

### **End-of-Life Care and Death Attitudes**

Research has shown that negative death attitudes, such as death fear and anxiety, play a major role in physicians' ability to keep severely ill patients alive for prolonged periods in the hope that they may eventually recover (Gruber et al., 2008). Schulz and Aderman (1979) found that the terminal patients of death-anxious physicians remained in the hospital significantly longer than terminal patients of physicians without death anxiety. In addition, Eggerman and Dustin (1985) observed that death-anxious physicians delayed informing patients of their prognosis. Kasket (2006) reported that physicians who responded to patient death with anxiety tend towards heroic attempts to sustain life, even when they were not appropriate. Moreover, researchers observed that physicians with high death anxiety were more likely to favor resuscitation at any cost, order nonessential tests for dying patients, and prescribe unwarranted and costly medications (Kasket, 2006).

Furthermore, Servaty et al. (1996) found that increased fear and anxiety among premedical students led to lower scores on a measure of communication with dying patients. This was a troublesome finding, because ineffective end-of-life communication skills have significant negative effects on dying patients and their families including, but not limited to, increased stress levels at the end of life and expensive medical bills (Kasket, 2006, Teno et al., 2013). For terminally ill patients, this results in prolonged dying, psychological distress, and substantial financial expense (Gruber et al., 2008).

**Summary**

Physicians deal with death on a daily basis, and their personal death attitudes are of particular interest in light of healthcare reform (Bendix, 2012; Black, 2007). Much is known about how negative death attitudes affect professional behavior, including the expression of empathy and the provision of end-of-life care. However, positive death attitudes have not received as much attention (Cochrane et al., 1990; Dickinson et al., 2006; Hamama-Raz et al., 2000). Death acceptance, as proposed by MMT, provides a positive perspective through which to explore death attitudes and their influence on professional behaviors (Tomer et al., 2007). Thus far, studies using MMT and death acceptance as a conceptual framework have led to fruitful results in illuminating the psychology of death, including the idea that human beings use both positive and negative attitudes in order to cope with mortality salience (Neimeyer, 1994; Tomer et al., 2007; Wong, 2005; Wong & Tomer, 2011). Therefore, it is important to expand the literature concerning the psychology of death, and incorporate research that measures both negative and positive death attitudes simultaneously, in order to better understand how individuals, including physicians and medical students, psychologically prepare for death (Tomer & Eliason, 2007).



### **Chapter 3**

#### **Hypotheses**

- 1) There will be statistically significant differences between medical students who have positive death attitudes and medical students who have negative death attitudes in levels of empathy and attitudes toward end-of-life care. Specifically,
  - a) Medical students with positive death attitudes will have higher levels of empathy and more positive attitudes toward end-of-life care.
  - b) Medical students with negative death attitudes will have lower levels of empathy and more negative attitudes toward end-of-life care.

- 2) Death acceptance will be significantly related to gender and cohort year in medical school. Specifically,
- a) Medical students who endorse death acceptance are significantly more likely to be female.
  - b) Medical students who endorse death acceptance are significantly more likely to be in an advanced year in medical school.

## **Chapter 4**

### **Method**

#### **Research Design and Justification**

This was a quantitative study that employed a cross-sectional survey research design to test the relationships between medical students' death attitudes, their levels of empathy, and their attitudes toward end-of-life care. This research design was chosen because of the ease of answering a brief online survey for busy medical students, which would optimize sample size and statistical power.

#### **Participants**

Participants in this study were a convenience sample of 206 medical students enrolled in the Doctor of Osteopathic Medicine program at the Philadelphia College of Osteopathic Medicine's (PCOM) Philadelphia campus. All were in the first through fourth years of the four-year program and were in good academic standing, meaning their grade point averages qualified them to continue in the Doctor of Osteopathic Medicine program at PCOM.

### **Inclusion/Exclusion Criteria**

Eligible participants included all current medical students in good academic standing at PCOM's Philadelphia campus who volunteered to complete the online measures, regardless of age, gender, race, ethnicity, or socioeconomic status. This study excluded all medical students not in good academic standing, because they did not appear on the Registrar's recruitment list.

### **Measures of Interest**

#### **Death Attitude Profile-Revised (DAP-R)**

The Death Attitude Profile-Revised (DAP-R) (See Appendix A) is a 32-item, self-report questionnaire, measuring death attitudes across five dimensions: fear of death (e.g., "Death is no doubt a grim experience"); death avoidance (e.g., "I always try not to think about death"); neutral acceptance (e.g., "Death is a natural aspect of life"); approach acceptance ("I believe that heaven will be a much better place than this world"); and escape acceptance (e.g., "Death provides an escape from this terrible world"; Wong, Reker, & Gesser, 1994; see Appendix A). Raters used a 7-point Likert scale, ranging from 1 (strongly disagree) to 7 (strongly agree). For each dimension, mean scale scores

were calculated, with higher scores indicating more agreement with that dimension. Of note, the DAP-R is not primarily used with medical students (Wong et al., 1994).

Research has supported that this scale has construct validity (Neimeyer, 1994). A factor analysis revealed all items loaded .40 or greater on at least one component, and the five components accounted for 63.1% of the variance. In addition, each dimension on the DAP-R has been shown to have internal consistency reliability (Cronbach  $\alpha = .65 - .97$ ; Neimeyer, 1994). Since its inception, the DAP-R has been used to examine the death attitudes of hospice and emergency nurses, nursing students, crisis line volunteers, clergy, college students, and older adults in order to assess death acceptance, as well as positive and negative death attitudes simultaneously (Iranmanesh et al., 2010; Malliarou et al., 2011; Payne et al., 1998; Royal, 2003; Schiappa, Gregg, & Hewes, 2004; Tomer & Eliason, 2000). Moreover, the DAP-R has been translated into Chinese and validated in a Chinese population (Ho, Chan, Chow, Pon, & Ng, 2010).

The DAP-R taps into both positive and negative death attitudes to more accurately reflect human responses to mortality salience (Niemic & Schulenberg, 2011). The measurement of death acceptance, combined with the measurements of fear of death and death avoidance, can capture unique individual profiles of how humans psychologically prepare for death (Neimeyer, 1994; Wong et al., 1994). Moreover, the DAP-R is grounded in Meaning Management Theory (MMT), which offers a useful conceptual framework for integrating various patterns of death attitudes (Neimeyer, 1994). Gesser et al. (1987), who explored the concept of death acceptance, proposed the three-component model: (1) neutral acceptance, or accepting death as a reality that is neither welcomed nor feared; (2) approach acceptance, or accepting death as a passageway to a happy afterlife;

and (3) escape acceptance, or accepting death as an escape from a painful existence (Tomer et al., 2007).

Because this study population consists of medical students, the researcher utilized neutral acceptance and approach acceptance as the measure of positive death attitudes, because their definitions most closely applied to the population being studied. The dimensions of neutral acceptance and approach acceptance have been shown to have an intercorrelation of  $-.07$ , meaning they were relatively independent dimensions (Neimeyer, 1994). However, research indicated that individuals, including medical students and physicians, were positively oriented toward death for different reasons, including acceptance of death as an integral part of life (neutral acceptance) as well as religious or spiritual acceptance, including belief in a happy afterlife (approach acceptance; Neimeyer, 1994). Neutral acceptance positively correlated with psychological and physical wellbeing, and negatively correlated with depression, especially in 18-29 year olds, the typical age range for medical students (Neimeyer, 1994). This is important evidence that supports the idea that positive death attitudes lead to positive outcomes, such as psychological and physical wellbeing.

Fear of death and death avoidance represented the measurement of negative death attitudes, since these two dimensions were found as correlated. The dimension of death avoidance correlated positively with fear of death ( $.47$ ), accounting for 22% of the variance (Neimeyer, 1994). Scores for all items ranged from (1) strongly disagree to (7) strongly agree. For each dimension (fear of death, death avoidance, neutral acceptance, and approach acceptance) a mean scale score was computed by dividing the total scale score by the number of items in each scale (Wong et al., 1994). The total possible score

on each subscale was 7. A median split was computed to form the groups of positive and negative death attitudes. Those that scored above the median were grouped as positive death attitudes, those below the median were grouped as negative death attitudes.

### **Jefferson Scale of Empathy-Student Version (JSE-S)**

The Jefferson Scale of Empathy-Student Version (JSE-S) is a 20-item instrument for measuring empathy, which is widely used and normed on medical students (Beckman, Reed, Shanafet, & West, 2010; see Appendix B). Raters used Likert scales ranging from 1 (strongly disagree) to 7 (strongly agree), with a range of possible overall JSPE-S scores from 20 to 140; lower and higher scores reflected lower and higher levels of empathy respectively (Beckman et al., 2010). Research supported this measure had construct validity (Beckman et al., 2010). Factor analysis revealed four dimensions, all with eigenvalues greater than 1: physician's view from the patient's perspective, understanding patient's feelings, ignoring patient's emotions, and thinking like the patient (Beckman et al., 2010). Other validity evidence included high internal consistency (Cronbach  $\alpha = .89$ ), acceptable correlation with other measures of empathy, and poor correlation with measures irrelevant to empathy (Beckman et al., 2010). For each dimension, mean scale scores were calculated, with higher scores indicating more agreement with that dimension. The overall total score was computed by averaging the scores of the subscales. The overall total scores ranged from 1 to 7. Higher overall scores indicated higher levels of empathy.

### **Attitude toward End-of-Life Care Assessment**

The third measurement tool used in this study was two survey items chosen from a national survey of medical students, residents, and faculty that was created to assess

end-of-life care attitudes (Block & Sullivan, 1998; see Appendix C). The survey was constructed based on a literature review and canvassed ten focus groups, which included students, residents, and academic leaders in end-of-life care, in order to develop and refine survey items. The survey included eight statements; however, previous studies using this scale reported low internal consistency and no coherent groupings in a factor analysis (Billings, Engelberg, Curtis, Block & Sullivan, 2010).

One study investigating end-of-life care attitudes chose two of the eight survey items that were conceptually similar and had face validity: 1) “I dread dealing with emotional distress of family members,” and 2) “Caring for dying patients is depressing” (Billings et al., 2010). These two items were correlated ( $r = .37$ ) and had fair reliability (Cronbach  $\alpha = .54$ ). Therefore, attitudes concerning end-of-life care were assessed by asking participants to rate their agreement with the two survey items on a 4-point Likert scale: (1) strongly disagree; (2) disagree; (3) agree; (4) strongly agree. The overall total score was computed by averaging the responses of the two items; overall total scores ranged from 1 to 4. Higher overall scores indicated more negative attitudes about end-of-life care.

## **Procedure**

Students eligible to participate in this study received an e-mail from the Registrar at PCOM’s Philadelphia campus that included the link to Survey Monkey. Survey Monkey is a web-based tool that guided participants through the process of completing the investigator’s informed consent form, as well as the three assessment measures used for the purposes of this study. Participants volunteered to complete the

three online assessment measures and provide demographic information by clicking on the aforementioned link. The e-mail introduced the primary investigator, and presented a request for participation in a research study evaluating death attitudes, empathy, and attitudes toward end-of-life care among medical students. The e-mail made clear that participation was voluntary, that anonymity was assured, and that participants could exit the study at any time they so decided. Recipients were informed that participants in the survey would be eligible after completing it for a raffle, with a \$100 Amazon.com gift card as the prize. As an added incentive, Survey Monkey's Sweepstakes Reward feature invited participants to enter a sweepstakes for a chance to win a \$100 Amazon.com gift card by completing a form at the end of the survey; only Survey Monkey's rewards partner ePrize is privy to the forms. The winner would be chosen by ePrize, who would also contact the winner to ensure their anonymity.

Participants were asked to click on the Survey Monkey link to access the introduction page. When the link was opened, the introduction page thanked them for participating in the study, presented another description of the study's purpose, and reiterated that participants would be asked to answer a number of questions about themselves, their death attitude, their empathy level, and their attitude toward end-of-life care. Participants were informed that the survey would take approximately 20 minutes to complete, and were urged to answer the questions as quickly as possible. When the participants were ready, they clicked a "begin survey" button and completed the three assessment measures, which were counterbalanced to control for order effects. After collecting the data through Survey Monkey, the investigator, having administered all aspects of the study, analyzed the data using SPSS Statistics Version 20.0.0.



## **Chapter 5**

### **Results**

The results of the analysis evaluating the research hypotheses of this study appear in this chapter. The research hypotheses of this study are as follows:

- 1) There will be statistically significant differences between medical students who have positive death attitudes and medical students who have negative death attitudes in levels of empathy and attitudes toward end-of-life care. Specifically,
  - a) Medical students with positive death attitudes will have higher levels of empathy and more positive attitudes toward end-of-life care.
  - b) Medical students with negative death attitudes will have lower levels of empathy and more negative attitudes toward end-of-life care.
- 2) Death acceptance will be significantly related to gender and cohort year in medical school. Specifically,
  - a) Medical students who endorse death acceptance are significantly more likely to be female.
  - b) Medical students who endorse death acceptance are significantly more likely to be in an advanced year in medical school.

### Demographic Information

Two hundred and six medical students enrolled in the Doctor of Osteopathic Medicine program at the Philadelphia College of Osteopathic Medicine (PCOM), Philadelphia campus, participated in the study (1225 total email recipients; 16.8% response rate). Each participant was asked to answer demographic questions about gender, ethnicity, cohort year in medical school, religious belief and spirituality. Table 1 shows the demographics of the participants. Of the 206 participants, 114 (55%) were female, 91 (44%) were male, and one (1%) was “other”. A majority of the participants were White/Caucasian (76%) and believed in spirituality (58%). Sixty-one participants (30%) were first-year medical school students, 37 participants (18%) were second-year medical school students, 49 participants (24%) were third-year medical school students, and 57 participants (28%) were fourth-year medical school students. Ninety-nine participants (48%) had religious beliefs and 105 (52%) did not.

Table 1

Demographics of the participants

Characteristic	Frequency (%)
Gender	
Male	91 (44)
Female	114 (55)
Other	1 (1)
Ethnicity	
White/Caucasian	157 (76)
Black/African American	5 (2)
Hispanic/Latino	3 (2)
Asian	24 (12)

Pacific Islander	2 (1)
American Indian	1 (1)
Other	12 (6)
Cohort year	
First year	61 (30)
Second year	37 (18)
Third year	49 (24)
Fourth year	57 (28)
Religious belief	
Yes	99 (48)
No	105 (52)
Spirituality	
Yes	117 (58)
No	83 (41)
Other	1 (1)

*Note: There were 2 missing responses for ethnicity, cohort year and religious belief.*

*There were 5 missing responses for spirituality.*

### **The Three Measures of Interest**

In this study, the following three measures of interest were considered: death attitudes, levels of empathy, and attitudes toward end-of-life care. Table 2 shows the descriptive statistics for the three measures of attitudes.

Death attitudes were measured via DAP-R, a survey instrument with three 7-point Likert scale items (1=strongly disagree to 7=strongly agree). The scores of death attitudes ranged from 1 to 7, with higher scores indicating more positive death attitudes. For the 206 participants, the mean score in death attitudes was 3.78 ( $SD = 0.25$ ), indicating that participants in this study had, on average, positive death attitudes. In

addition, a median split was computed to form the groups of positive and negative death attitudes. Among the 206 participants, 95 (46%) had negative death attitudes, and 111 (54%) had positive death attitudes.

Levels of empathy were measured via JSE-S, a survey instrument with 20 7-point Likert scale items (1=strongly disagree to 7=strongly agree). The scores of levels of empathy ranged from 1 to 7, with higher scores indicating higher levels of empathy. For the 206 participants, the mean score in levels of empathy was 5.74 ( $SD = 0.57$ ), indicating that participants in this study had, on average, medium to high levels of empathy.

Attitudes toward end-of-life care were measured via two 4-point Likert scale items, with 1 = strongly disagree, 2 = disagree, 3 = agree, and 4 = strongly agree. The scores in attitudes toward end-of-life care ranged from 1 to 4, with higher scores indicating more negative attitudes toward end-of-life care. For the 206 participants, the mean score in attitudes toward end-of-life care was 2.23 ( $SD = 0.65$ ), indicating that participants in this study had, on average, negative attitudes toward end-of-life care.

Table 2

Descriptive statistics of measures of interest

	Mean (SD)	Median	Min	Max
Death attitudes	3.78 (0.25)	3.78	2.88	4.31
Levels of empathy	5.74 (0.57)	5.75	3.80	6.80
Attitudes toward end-of-life care	2.23 (0.65)	2.00	1.00	4.00

Note: N =206. SD = standard deviation

**Hypothesis 1**

In this section, the results of the analysis of Hypothesis 1 are discussed. Hypothesis 1 and the corresponding sub-hypotheses were as follows:

- 1) There will be statistically significant differences between medical students who have positive death attitudes and medical students who have negative death attitudes in levels of empathy and attitudes toward end-of-life care. Specifically,
  - a) Medical students with positive death attitudes will have higher levels of empathy and more positive attitudes toward end-of-life care.
  - b) Medical students with negative death attitudes will have lower levels of empathy and more negative attitudes toward end-of-life care.

A MANOVA was used to determine if statistically significant differences existed between medical students with positive death attitudes and medical students with negative death attitudes in levels of empathy and attitudes toward end-of-life care. The two assumptions of MANOVA, multivariate normality and equality of variance-covariance matrices, were checked. The chi-square QQ plot was used to assess multivariate normality. It appeared that the points lay along a nearly straight line; consequently, the multivariate normality assumption remained tenable. The results of the Box's M test for homogeneity of dispersion matrices supported the homogeneity of variance-covariance matrices,  $p = 0.915$ .

Table 3 shows the means and standard deviations of levels of empathy and attitudes toward end-of-life care, stratified by death attitudes. The mean scores of

levels of empathy were 5.74 ( $SD = 0.57$ ) and 5.73 ( $SD = 0.57$ ) for students with negative death attitudes and students with positive death attitudes, respectively. The mean scores of attitudes toward end-of-life care were 2.11 ( $SD = 0.62$ ) and 2.33 ( $SD = 0.66$ ) for students with negative death attitudes and students with positive death attitudes, respectively. The results of MANOVA showed that there was a statistically significant difference in at least one of the dependent variables, levels of empathy and attitudes toward end-of-life care, between students with negative death attitudes and students with positive death attitudes,  $Pillai's\ trace = 0.993, p < 0.05$ .

Two one-way ANOVAs were conducted to identify which dependent variable (attitudes on levels of empathy or/and attitudes toward end-of-life care) death attitudes significantly impacted. The results of the ANOVAs suggested that there was no statistically significant difference in levels of empathy between students with negative death attitudes and students with positive death attitudes,  $F(1, 204) = 0.016, p = 0.898$ . There was a statistically significant difference in attitudes toward end-of-life care between students with negative death attitudes and students with positive death attitudes,  $F(1, 204) = 6.458, p < 0.05$ . Thus, no statistically significant difference existed in levels of empathy between students with negative death attitudes and students with positive death attitudes. However, there was a statistically significant difference in attitudes toward end-of-life care between students with negative death attitudes and students with positive death attitudes. The mean scores of attitudes toward end-of-life care were 2.11 ( $SD = 0.62$ ) and 2.33 ( $SD = 0.66$ ) for students with negative death attitudes and students with positive death attitudes, respectively. In other words, students with positive death attitudes had more negative attitudes toward end-of-life care than students with negative death attitudes.

Table 3

Mean (SD) of attitudes on levels of empathy and attitudes toward end-of-life care, by death attitudes

	Death attitudes	
	Negative	Positive
Attitudes on levels of empathy	5.74 (0.57)	5.73 (0.57)
Attitudes toward end-of-life care	2.11 (0.62)	2.33 (0.66)

## Hypothesis 2

In this section, the results of the analysis of Hypothesis 2 are discussed. Hypothesis 2 and the corresponding sub-hypotheses were as follows:

- 2) Death acceptance will be significantly related to gender and year in medical school. Specifically,
  - a) Medical students who endorsed death acceptance are significantly more likely to be female.
  - b) Medical students who endorsed death acceptance are significantly more likely to be in an advanced year in medical school.

Note that only participants with positive death attitudes were included in the analysis for Hypothesis 2. A two-way ANOVA was conducted to answer Hypothesis 2. The dependent variable was the scores in death acceptance, and the independent variables were gender and year in medical school. The interaction effect of gender and year in

medical school was also considered in the model. The assumptions of the models were checked. The skewness and kurtosis of the residuals from the fitted model were 0.732 and 0.252, respectively. Although the Shapiro-Wilk test rejected the null hypothesis that the residuals were from a normal distribution ( $p = 0.002$ ), the QQ plot suggests that the residuals followed a normal distribution. Levene's test did not reject the null hypothesis that the error variance is equal ( $p = 0.657$ ). In addition, the plot of residuals and fitted values also suggests that the variance is homogeneous. Thus, the investigator concluded that the assumptions of the model were satisfied; hence, the fitted model was adequate.

Table 4 shows the results of the ANOVA. The interaction effect of gender and year in medical school was not statistically significant,  $F(3, 100) = 0.035$ ,  $p = 0.134$ , indicating that the effect of gender on death acceptance did not depend on the year in medical school and vice-versa. The effect of gender was not statistically significant,  $F(1, 100) = 0.879$ ,  $p = 0.351$ . The mean death acceptance scores were 3.96 ( $SD = 0.13$ ) and 3.97 ( $SD = 0.14$ ) for male and female students, respectively. The effect of year in medical school was not statistically significant,  $F(3, 100) = 0.420$ ,  $p = 0.739$ . The mean death acceptance scores were 3.97 ( $SD = 0.12$ ), 3.98 ( $SD = 0.14$ ), 3.97 ( $SD = 0.13$ ), and 3.96 ( $SD = 0.16$ ) for students in the first, second, third, and fourth years of medical school, respectively. The results suggested that there was no statistically significant difference in death acceptance between male and female students. The results also suggested that there was no statistically significant difference in death acceptance among students in different years of medical school.

Table 4



ANOVA table

Source of variation	Type III sum of squares	<i>DF</i>	Mean square	<i>F</i>	<i>P</i>
Gender	0.016	1	0.016	0.879	0.351
Year in medical school	0.023	3	0.008	0.420	0.739
Gender X Year in medical school	0.104	3	0.035	1.902	0.134
Error	1.822	100	0.018		
Total	1.939	107			

Note: *DF* = degrees of freedom, *F* = *F*-statistic, *p* = *p*-value.

Table 5

Mean (*SD*) of death acceptance

		<i>N</i>	Mean ( <i>SD</i> )
Gender	Male	44	3.96 (0.13)
	Female	66	3.97 (0.14)
Year in medical school	First	34	3.97 (0.12)
	Second	24	3.98 (0.14)
	Third	23	3.97 (0.13)
	Fourth	27	3.96 (0.16)

## **Chapter 6**

### **Discussion**

Physicians' abilities to provide effective end-of-life care and to appropriately express empathy are inextricably linked to the current and future climate of healthcare (Teno et al., 2013). Reimbursement bonuses for Medicaid and Medicare patients are primarily available to physicians who receive high ratings in patient satisfaction and positive outcomes, and the literature suggests that the "silver tsunami" want quality of life issues addressed competently as they near the end of their lives (Taylor, 2003). In addition, despite Americans becoming increasingly interested in less aggressive end-of-life care, research indicates that patients are instead experiencing more end-of-life ICU visits, hospitalizations, and last-minute transitions, based in part on some physicians' ineffective end-of-life care communication (Teno et al., 2013).

### **Clinical Implications**

#### **Hypothesis 1**

Contrary to the hypothesis that a difference would exist between medical students with positive death attitudes and those with negative death attitudes in their levels of empathy, results indicated an absence of any significant difference. There are several possible explanations for this discrepancy. First, the population studied was students of osteopathy, a medical philosophy that embraces empathy and inclusive attitudes as standards of good practice (Calabrese et al., 2013; Kimmelman et al., 2012). Therefore, these results seem to point to the idea that osteopathic curricula are effective in teaching and maintaining empathy as an element of a holistic, integrated approach, regardless of

students' preexisting death attitudes (Gruber et al., 2008). Thus, the medical students in this study may have been more similar than dissimilar in regard to empathy, considering their training and the likelihood that more empathic individuals would choose an osteopathic program with an integrated, holistic, empathy-based approach (Anderson et al., 2008).

Another possible explanation for this discrepancy is the notion that medical students might project their emotions, such as empathy, onto patients to deflect attention from their own anxieties, a common emotional management strategy utilized by medical students and physicians called "using the patient" (Smith & Kleinman, 1989). By employing this strategy, students manage their own discomfort by focusing on the patient's thoughts and feelings. Through empathizing, students and physicians who experience heightened death fear and anxiety can shift attention from themselves to the patient (Smith & Kleinman, 1989). This strategy has proven to increase reporting of empathy by individuals with high levels of death fear and anxiety, because it reduces negative feelings in the moment, which perhaps explains why participants who reported negative death attitudes also reported levels of empathy comparable to participants with positive death attitudes (Robbins, 2012; Servaty et al., 1996.)

Furthermore, results indicated a significant difference between medical students with positive death attitudes and those with negative death attitudes in their positions on end-of-life care. Interestingly, the nature of the significant relationship was opposite that hypothesized: medical students with positive death attitudes primarily reported negative attitudes toward end-of-life care. Again, there are several possible explanations for this result. It indicates that future physicians' death attitudes do influence their attitudes

toward end-of-life care, which makes sense intuitively and is consistent with previous research (Mason et al., 2008). However, personally accepting death and viewing death in a positive light might not mitigate the enormous responsibility and inherent difficulties that physicians may experience when helping dying patients and their families. This result confirms previous research that found that medical students have positive attitudes in regard to their professional responsibilities to dying patients and their families; however, they reported negative emotional reactions when facing actual end-of-life care situations (Mason et al., 2008).

In addition, the concept of attitudes toward end-of-life care is, in general, a relatively understudied construct, with only a few studies exploring the concept in medical students and physicians. As a result, there is a lack of well-validated measures to assess for these attitudes in medical students and physicians. It is possible, then, that the measure utilized in this study did not sufficiently assess the construct under investigation (Billings et al., 2010; Block & Sullivan, 1998).

### **Hypothesis 2**

Contrary to the hypothesis, medical students who possessed the positive death attitude of acceptance were not significantly more likely to be female. Since there are currently no known studies that have directly examined the relationship between death acceptance and gender, this finding is novel, indicating that male and female osteopathic medical students have equivalent levels of death acceptance. This result corroborates previous research indicating that individuals, male and female, who choose an osteopathic medical school tend to have more positive, inclusive attitudes in regard to

death and dying (Billings et al., 2010). Also, this result indicates that in relation to gender, death attitudes are less malleable than other views held by medical students.

Again contrary to the hypothesis, there was no significant relationship between possessing positive death attitudes and having been in medical school for a longer period of time. Since there are currently no known studies that have directly examined the relationship between death acceptance and cohort year, this finding is also novel, indicating that osteopathic medical students' levels of death acceptance remain unchanged throughout medical school. Again, this result corroborates previous research indicating that individuals who apply to and attend an osteopathic medical program have more positive, inclusive attitudes concerning death and dying (Billings et al., 2010). Perhaps osteopathic medical students' death acceptance and/or death attitudes are less malleable throughout the course of medical school.

Because physicians' death attitudes and empathy ultimately affect patient care and satisfaction, medical school provides an opportunity for future physicians to learn the importance of these factors' influence. Expanding curricula to include comprehensive didactics on death attitudes and empathy could increase the likelihood that future physicians will successfully provide effective and satisfactory end-of-life care (Teno et al., 2013). Education about death attitudes is also a practical means to improve physician-patient communication, and so reduce last-minute transitions and visits to the ICU, as well as decreasing end-of-life hospitalizations (Teno et al., 2013). In addition, education in medical school about the dual-system model and MMT may prove beneficial by making future physicians aware that personal death attitudes influence attitudes toward end-of-life care and consequently patients' satisfaction and experience of a

meaningful death (Cochrane et al., 1990; Dickinson et al., 2006; Hamama-Raz et al., 2000; Malliarou et al., 2011; Servaty et al., 1996, Teno et al., 2013).

### **Limitations**

This study was to some degree exploratory in nature; thus, several limitations apply. Most importantly, few efforts have been undertaken in the field to assess and operationalize attitudes toward end-of-life care and little agreement exists about what end-of-life care attitudes are and how they are best measured (Billings et al., 2010). Therefore, the present study utilized a relatively untried measure to evaluate attitudes toward end-of-life care, and consequently, little information was available concerning the validity and reliability of this measure. This limitation highlights the pressing need for the development of psychometrically sound measures of attitudes toward end-of-life care, because such attitudes rarely discussed in the literature (Billings et al., 2010; Block & Sullivan, 1998). The lack of prior research into death acceptance was another limitation of this study, particularly concerning the relationship between death acceptance and empathy, about which no research at all existed.

In addition, this study utilized three self-report measures, and as with all such measures, the possibility of response bias existed. Moreover, this study did not use any behavioral measures. All data were self-reported, which is limited by the fact that it cannot be independently verified. This study used a sample of convenience; it is therefore possible that the results were unique to PCOM's medical school and its cultural milieu, making generalization of the result problematic. The population was such that some students had not actually delivered end-of-life care. In fact, depending on specialty choice, some students in this population may never have thought about, and may never

need to think about or deliver end-of-life care. Measuring their death attitudes was therefore too hypothetical.

Furthermore, the medical program in which the participants were enrolled was firmly grounded in the osteopathic model of practicing medicine, implying that students possessed a significant amount of pre-existing knowledge of the model underlying the basis of this study. This pre-existing fund of knowledge may have biased the participants' reporting on the all three measures, because the personalities of individuals applying to osteopathic medical programs may have already included increased levels of empathy and inclusive attitudes. Consequently, students' responses may reflect these biases, which makes generalization of the results to other medical student populations problematic. The multiple limitations of this study, however, emphasized the need for future research into medical students' death attitudes.

### **Future Research**

Due to the lack of extant research on medical students' death acceptance, future research should focus on further exploring this construct in the medical student population. Information and findings gained from death acceptance research could prove useful for physicians, as they transition into the new healthcare model and serve an increasing number of dying patients (Taylor, 2003). Future research into death acceptance could revise the methods used for gathering data, particularly in regard to finding a valid, reliable instrument for assessing medical students' attitudes toward end-of-life care.

In addition, future research could include a random sample of medical students from around the country, rather than a sample of convenience, to better generalize results.

Also, behavioral measures could be employed to measure empathy and attitudes toward end-of-life care more objectively, which would reduce the potential for response bias. Furthermore, studying medical students who actually have delivered end-of-life care, such as third and fourth year students, could increase the chance of gleaning more relevant data. Future researchers might also explore additional factors in relation to death attitudes beyond gender and cohort year, such as ethnicity and religion, since these constructs have been shown to influence death attitudes, empathy, and attitudes toward end-of-life care (Duffy et al., 2006). In sum, future researchers could examine how death attitudes, and consequently professional responsiveness, might be improved through specialized training starting in medical school. The results of that training, however, will need to be evaluated for efficacy (Neimeyer et al., 2004).

## **Conclusion**

This study utilized two theoretical models of coping with death, the meaning management model and the dual process model, to examine the relationship between medical students' death attitudes and their professional empathy and attitudes toward end-of-life care. The findings did not support the hypothesis that death attitudes influence empathy. However, findings did show that death attitudes influenced attitudes toward end-of-life care. Furthermore, additional analyses did not indicate a relationship between death acceptance and gender or cohort year. These findings provided information about the way that future physicians individually cope with death, and how their personal death attitudes influenced their expression of empathy and their attitudes toward end-of-life care. As the population becomes more diverse and continues to age,



accounting for a wide variety of factors that influence medical students' expression of empathy and attitudes toward end-of-life care will be increasingly important in increasing patient satisfaction and providing effective end-of-life care in future physicians.

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